

(CLAIMS)

1. A data transmitting apparatus comprising:

a storage management part for managing a storage area of receiving machines;

a database part for holding storage management information containing classification numbers and a maximum size of each of the classification numbers, and contents data wherein the classification numbers are data for managing storage areas of said receiving machines and are used to classify the contents data;

a schedule management part for scheduling the distribution of data;

a transmitting part for transmitting data; and

a communication part for communicating data,

wherein, according to a schedule decided by said schedule management part, contents data provided with classification numbers and identification numbers for identifying the contents data, and storage management information are distributed to said receiving machines.

2. A receiving machine comprising:

a receiving part for receiving contents data broadcast from a data transmitting apparatus;

a communication part for acquiring data over a communication line;

a storage area for storing; and

a data allocation part for allocating received contents data to said storage area;

wherein:

said data allocation part updates storage management information in said storage area by storage management information acquired in said communication part; and

said data allocation part stores contents data received by said receiving part in said storage area only when it determines that, even if the contents data were stored, a total size of contents data of each classification number in said storage area would not exceed a maximum size for each classification number contained in the storage management information in said storage area.

3. The data transmitting apparatus according to claim 1, wherein, when changing the storage management information, said storage management part decides a distribution start date of the storage management information by a decided date when the storage management information is changed, and an operation value set in said storage management part.

4. The data transmitting apparatus according to claim 1, wherein, when a receiving machine issues a request for acquisition of the storage management information to said data transmitting apparatus, or when notified from a receiving machine that data overflowed, said storage management part detects that said receiving machine failed in acquiring the storage management information according to a predetermined schedule, and said storage management part creates a delete instruction specifying a list of contents data to be deleted in said receiving machine from a storage management information acquisition history, and said communication part distributes the delete instruction to said receiving machine.

5. The receiving machine according to claim 2, wherein, according to a list of contents data to be deleted, specified in a delete instruction received over a communication line by said communication part, said data allocation part deletes fields of applicable contents data from a contents list and the contents data from said storage area.

6. The receiving machine according to claim 2, wherein, upon detecting that the storage management information was unsuccessfully acquired according to a predetermined schedule, said communication part issues a request for acquisition of the storage management information to the data transmitting apparatus, and when the latest storage management information is acquired, said data allocation part compares the storage management information newly acquired and old storage management information held in said storage area, creates a list of contents data to be deleted, and deletes fields of applicable contents data from a contents list and the contents data from said storage area.

7. The receiving machine according to claim 2, including said storage area for holding a storage management information change history and contents data, and said data allocation part for managing a contents list,

wherein, if said data allocation part detects that a total amount of contents data exceeds a maximum size for each classification number, depending on whether contents data received by said receiving part is stored or storage management information received by said communication part is updated, said data allocation part creates a list of causative contents data,

and deletes fields of applicable contents data from the contents list and the contents data from said storage area.

8. The data transmitting apparatus according to claim 1, wherein said storage management part appends expiration dates to the storage management information for distribution.

9. The receiving machine according to claim 2, including a timer processing part for performing timer processing,

wherein, when said communication part receives storage management information provided with expiration dates, said timer processing part updates storage management information held in said storage area by the expiration dates.

10. The data transmitting apparatus according to claim 1, further including a data input part for inputting contents data,

wherein said database part holds a maximum size of each of one or more subareas to which a maximum storage size of a receiving machine is split and allocated, whereby, when contents data with a subarea specified is inputted from said data input part, said storage management part checks whether the size of the contents data does not exceed a maximum size of each subarea, and holds only contents data passing the checking in said database part.

11. The data transmitting apparatus according to claim 10, wherein, if subareas increasing in maximum size or subareas to be added, and subareas decreasing in maximum size or subareas to be deleted exist at the same time when maximum sizes of subareas are changed, said schedule management part performs scheduling so that delete indication data or decreased data is

distributed before added data or increased data is distributed.

12. The data transmitting apparatus according to claim 10, wherein, when subareas increasing in maximum size or subareas to be added exist, said storage management part keeps a subarea change history, whereby said schedule management part uses the subarea change history to perform scheduling so that added data or increased data is preceded by contents data in subareas decreasing in maximum size within a period satisfying a placement condition or deleted contents data.

13. The data transmitting apparatus according to claim 11, wherein, if subareas increasing in maximum size or subareas to be added, and subareas decreasing in maximum size or subareas to be deleted exist at the same time when maximum sizes of subareas are changed, said schedule management part uses an operation value set in said storage management part to perform scheduling so that delete indication data or decreased data is distributed before added data or increased data is distributed.

14. The data transmitting apparatus according to claim 10, further including a terminal management part for managing a history indicating whether delete indication data or decreased data is acquired for each receiving machine, wherein, if subareas increasing in maximum size or subareas to be added, and subareas decreasing in maximum size or subareas to be deleted exist at the same time when maximum sizes of subareas are changed, said storage management part collects statistics from a history indicating whether receiving machines managed by said terminal management part acquired delete indication data or decreased data, and finds percentages of receiving machines that

successfully acquired them, and the schedule management part performs scheduling to transmit added data or increased data when a specified percentage is exceeded.

15. The data transmitting apparatus according to claim 10, wherein said storage management part holds a subarea change history or contents data size change history, whereby, when notified from a receiving machine that data overflowed, said storage management part uses the subarea change history or contents data size change history to create a delete instruction specifying a list of contents data to be deleted, and said communication part distributes the delete instruction to said receiving machine.

16. The receiving machine according to claim 2, wherein said data allocation part holds a change history of subareas in which contents data was stored, or contents data size change history, whereby, if said data allocation part detects that storage of contents data received by said receiving part will cause a maximum size for each classification number to be exceeded, said data allocation part uses the contents data size change history to create a list of contents data to be deleted, and deletes fields of applicable contents data from a contents list and the contents data from said storage area.

17. The receiving machine according to claim 2, wherein, if said data allocation part detects that storage of contents data received by said receiving part will cause a maximum storage size of said storage area to be exceeded, said data allocation part deletes contents data from said database part according to a deletion condition and deletes applicable fields from a

contents list.

18. The receiving machine according to claim 17, wherein the deletion condition is classification numbers or identification information appended to contents data.

19. The receiving machine according to claim 17, wherein said storage management part manages, for each receiving machine, a history when notified from said receiving machine that data overflowed, whereby the existence of a receiving machines with history information satisfying a given condition is detected and said communication part distributes an instruction to delete all contents data to said receiving machine.

20. The receiving machine according to claim 17, wherein, if said data allocation part detects that storage of contents data received by said receiving part will cause a maximum size for each classification number to be exceeded, said storage area holds history information about overflow, whereby, when the history information satisfies a given condition, said data allocation part deletes all contents data from the storage area and deletes all fields from a contents list.

21. The receiving machine according to claim 17, wherein said data processing part holds a viewing history for each contents data in a storage area, whereby if said data allocation part detects that storage of contents data received by said receiving part will cause a maximum size of a storage area to be exceeded, contents data having not been viewed for a longer period is deleted earlier.

22. The data transmitting apparatus according to claim 1, wherein said storage management part manages, for each

receiving machine, information about acquisition by receiving machines of delete instructions distributed over a communication line, whereby said storage management part creates, for each of said receiving machines, a delete instruction specifying a list consisting of contents data to be deleted, not acquired by said receiving machine, and said communication part distributes the delete instruction.

23. The data transmitting apparatus according to claim 22, wherein said storage management part deletes a list of contents data to be deleted, acquired by over a given percentage of receiving machines, from said database part.

24. The receiving machine according to claim 2, including an input part capable of selecting contents data to be stored, wherein a selection type contents data maximum size is held in said storage area to store a maximum size of selection type contents data, whereby, when contents data selected in said input part is received, said data allocation part checks the size of the received contents data and stores the received contents data in said storage area only when storage of the contents data will not cause the selection type contents data maximum size held in said storage area to be exceeded.

25. The receiving machine according to claim 2, wherein, when the data transmitting apparatus groups plural contents data and sets different receive conditions in each contents data within a group to transmit the contents data, said storage area holds attribute information specific to the receiving machine or users, said data processing part selects only contents data, of contents data within an identical group received by said



receiving part, in which a receive condition matching attribute information held in said storage area is set, and said data allocation part stores only contents data selected by said data processing part in said storage area.

26. The data transmitting apparatus according to claim 1, further including a data input part for receiving data in which a different receive condition is set in each contents data within a group of plural contents data,

wherein, when receive conditions to be set in contents data within an identical group are changed, or when the attribute information held in the receiving machine may be changed, said schedule management part creates, for each contents data, transmitting data provided with data containing an indication to delete other contents data within the same group as the contents data, and said transmitting part transmits the transmitting data.

27. The data transmitting apparatus according to claim 26, wherein, when a receive condition appended to contents data within the group specifies that said input part in the receiving machine can receive only one of contents data within an identical group, maximum sizes of contents data within an identical group in storage management information held in said database part are set identical, and the sum of maximum sizes of groups is set to a storage area maximum size.

28. The data transmitting apparatus according to claim 1, wherein said schedule management part provides a different reserve transmitting time zone than is provided for contents data normally scheduled, and when it becomes necessary to

transmit contents data other than that normally scheduled, creates transmitting data in the reserve transmitting time zone, and said transmitting part transmits it.

29. A data broadcast schedule system transmitting and receiving data over a transmission line, wherein:

a receiving machine of the data broadcast schedule system has a data allocation part for allocating a storage area of the receiving machine to each of data to be received; and

a data transmitting apparatus to transmit data to the receiving machine has a schedule management part for making a transmitting schedule according to the result of predicting or determining an increase or decrease in said storage area of the receiving machine that can be allocated to each data.

30. The data broadcast schedule system according to claim 29 that transmits and receives data over a transmission line, wherein said schedule management part of the data transmitting apparatus makes a transmitting schedule so that, when it is predicted that arbitrary data being transmitted increases and other data being transmitted decreases, it decreasingly transmits the other data for a while before increasingly transmitting the arbitrary data.

31. A data broadcast schedule system transmitting and receiving data over a transmission line, wherein a data transmitting apparatus that transmits data to a receiving machine to transmit and receive data has a schedule management part for making a transmitting schedule according to the result of predicting or determining an increase or decrease in the storage area of the receiving machine that can be allocated to

each data.

32. The data broadcast schedule system according to claim 31 that transmits and receives data over a transmission line, wherein the schedule management part of the data transmitting apparatus makes a transmitting schedule so that, when it is predicted that arbitrary data being transmitted increases and other data being transmitted decreases, it decreasingly transmits the other data for a while before increasingly transmitting the arbitrary data.

33. A data broadcast schedule method for transmitting and receiving data over a transmission line, wherein a data transmitting apparatus that transmits data to a receiving machine to transmit and receive data makes a transmitting schedule according to the result of predicting or determining an increase or decrease in the storage area of the receiving machine that can be allocated to each data.

34. A recording medium in which a data broadcast schedule program for transmitting and receiving data over a transmission line is recorded, wherein a data transmitting apparatus that transmits data to a receiving machine to transmit and receive data makes a transmitting schedule according to the result of predicting or determining an increase or decrease in the storage area of the receiving machine that can be allocated to each data.

35. A data broadcast schedule program for transmitting and receiving data over a transmission line, wherein a data transmitting apparatus that transmits data to a receiving machine to transmit and receive data makes a transmitting schedule according to the result of predicting or determining

an increase or decrease in the storage area of the receiving machine that can be allocated to each data.